

Proposal for:

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

Submitted to:

**CALFED BAY-DELTA PROGRAM
1416 Ninth Street, Suite 1155
Sacramento, CA 95814**

Submitted by:

**MOFFATT & NICHOL ENGINEERS
3000 Citrus Circle, Suite 230
Walnut Creek, CA 94598**

**DEPARTMENT OF PARKS AND RECREATION
State of California
101 J Street
Sacramento, CA 95814**

July 2, 1998

M&N File No. 98183

Attachment H

COVER SHEET (PAGE 1 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Franks Tract State Recreation Area
General Plan Wetlands Habitat Restoration

Proposal Title: Planning Study

Applicant Name: Moffatt & Nichol Engineers

Mailing Address: 3000 Citrus Circle, Suite 230, Walnut Creek, CA 94598

Telephone: 925-944-5411

Fax: 925-944-4732

Amount of funding requested: \$ 372,756 for 1 years

Indicate the Topic for which you are applying (check only one box). Note that this is an important decision: see page of the Proposal Solicitation Package for more information.

- | | |
|---|---|
| <input type="checkbox"/> Fish Passage Assessment | <input type="checkbox"/> Fish Passage Improvements |
| <input checked="" type="checkbox"/> Floodplain and Habitat Restoration | <input type="checkbox"/> Gravel Restoration |
| <input type="checkbox"/> Fish Harvest | <input type="checkbox"/> Species Life History Studies |
| <input type="checkbox"/> Watershed Planning/Implementation | <input type="checkbox"/> Education |
| <input type="checkbox"/> Fish Screen Evaluations - Alternatives and Biological Priorities | |

Indicate the geographic area of your proposal (check only one box):

- | | |
|---|---|
| <input type="checkbox"/> Sacramento River Mainstem | <input type="checkbox"/> Sacramento Tributary: <u> </u> |
| <input checked="" type="checkbox"/> Delta | <input type="checkbox"/> East Side Delta Tributary: <u> </u> |
| <input type="checkbox"/> Suisun Marsh and Bay | <input type="checkbox"/> San Joaquin Tributary: <u> </u> |
| <input type="checkbox"/> San Joaquin River Mainstem | <input type="checkbox"/> Other: <u> </u> |
| <input type="checkbox"/> Landscape (entire Bay-Delta watershed) | <input type="checkbox"/> North Bay: <u> </u> |

Indicate the primary species which the proposal addresses (check no more than two boxes):

- | | |
|--|--|
| <input type="checkbox"/> San Joaquin and East-side Delta tributaries fall-run chinook salmon | |
| <input checked="" type="checkbox"/> Winter-run chinook salmon | <input type="checkbox"/> Spring-run chinook salmon |
| <input type="checkbox"/> Late-fall run chinook salmon | <input type="checkbox"/> Fall-run chinook salmon |
| <input checked="" type="checkbox"/> Delta smelt | <input type="checkbox"/> Longfin smelt |
| <input type="checkbox"/> Splittail | <input type="checkbox"/> Steelhead trout |
| <input type="checkbox"/> Green sturgeon | <input type="checkbox"/> Striped bass |
| <input type="checkbox"/> Migratory birds | |

COVER SHEET (PAGE 2 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Indicate the type of applicant (check only one box):

- | | |
|--|---|
| <input type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
| <input type="checkbox"/> Public/Non-profit joint venture | <input type="checkbox"/> Non-profit |
| <input type="checkbox"/> Local government/district | <input checked="" type="checkbox"/> Private party |
| <input type="checkbox"/> University | <input type="checkbox"/> Other: _____ |

Indicate the type of project (check only one box):

- | | |
|--|---|
| <input checked="" type="checkbox"/> Planning | <input type="checkbox"/> Implementation |
| <input type="checkbox"/> Monitoring | <input type="checkbox"/> Education |
| <input type="checkbox"/> Research | |

By signing below, the applicant declares the following:

- (1) the truthfulness of all representations in their proposal;
- (2) the individual signing the form is entitled to submit the application on behalf of the applicant (if applicant is an entity or organization); and
- (3) the person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section II.K) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Richard Dambelma
Richard Dambelma

(Signature of Applicant)

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

EXECUTIVE SUMMARY

a. Project Title and Applicant Name

Project Title: *Franks Tract State Recreation Area*
 General Plan Wetlands Habitat Restoration
 Planning Study

Co-Applicants: *Moffatt & Nichol Engineers (MNE)*
 California Department of Parks and Recreation (DPR)

- b. Project Description and Primary Biological/Ecological Objectives** - Franks Tract State Recreation Area ("SRA"), located in Contra Costa County, consists of two flooded Delta tracts totaling approximately 3300 acres owned by the State of California and operated by the DPR. In 1990, DPR contracted with MNE to prepare an engineering Feasibility Study of constructing demonstration islands to bolster the fish and wildlife resources of the SRA, provide effective wave barriers to help protect the levees of neighboring islands, and expand the SRA's land base for recreational uses, in accordance with the goals of the General Plan for the SRA. The demonstration islands serve as a pilot program for construction of a series of islands with a total area of 500 acres.

The first phase of the demonstration island project consisting of completion of the CEQA environmental review and permit process, and preparation of construction documents, has been funded through a grant from CALFED. The second phase, consisting of island construction and monitoring, has been proposed to CALFED for funding. These islands will restore about 45 acres of the existing deeply flooded habitat to a combination of CALFED priority habitat types.

The General Plan for the SRA establishes the goal of creating a series of islands with a total area of about 500 acres. The islands can be configured to provide primary ecological benefits for the CALFED priority species by restoring additional deeply flooded habitat to a combination of shallow tidal perennial and intertidal habitat, fresh emergent wetlands habitat, and midchannel islands and shoal habitat. The co-applicants intend to proceed with a study to prepare a specific plan for island buildout. The incentive for preparing this plan now, even as the demonstration island project is underway, is to have a specific plan that DPR can utilize for decision making as it seeks out opportunities for additional island construction.

The location of Franks Tract SRA and site map showing the schematic General Plan islands are presented in Figure 1a and 1b respectively.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

- c. **Approach/Tasks/Schedule** – MNE will prepare an implementation study to provide a detailed roadmap for island construction consistent with the objectives of the Ecosystem Restoration Program Plan (ERPP) and the resource management goals of DPR. The study will consist of four primary tasks: 1) Ecological Assessment and Restoration Planning, 2) Preliminary Engineering, 3) Implementation Planning, and 4) Environmental Review and Permit Planning. The proposed schedule allows 12 months for completion of the study from receipt of a Notice to Proceed.
- d. **Justification for Project and Funding by CALFED** - The project is justified because it will facilitate CALFED's restoration objectives for several priority habitat types identified in the Ecosystem Restoration Program Plan (ERPP) within the Central and West Delta ecological unit as shown on Exhibit II. The use of CALFED's funds is necessary because the DPR is otherwise unable to fund the study.
- e. **Budget Costs and Third Party Impacts** - The budget requested from CALFED for the planning effort is \$372,756.

Some third party impacts have been identified. Neighboring island flood protection levees will benefit due to enhanced wave sheltering. State Water Agencies will benefit due to reduced risk of water quality degradation resulting from levee breaks on neighboring islands. SRA Recreationists will benefit due to ecosystem restoration.

- f. **Applicant Qualifications** - MNE is a California based firm with over 50 years specialized experience in Coastal Engineering. The firm has completed numerous large coastal wetlands restoration projects, as well as several Delta Wetlands projects. DPR is the State sponsor of the proposed project
- g. **Monitoring and Data Evaluation** – Since no construction will be performed at this time, ecological and biological monitoring will not be conducted. A program to accomplish required pre and post construction monitoring will be developed as part of the study.
- h. **Local Support/Coordination with other Programs/Compatibility with CALFED Objectives** - Local and State support for island construction, primarily due to wave suppression benefits for neighboring island levees, was apparent during development of the Franks Tract SRA General Plan. State and Federal resource agencies were involved in development of the General Plan calling for island construction. The habitat restoration goals of the plan are based on the Resource Management Goals of DPR, and the CALFED ERPP objectives shown on Exhibit II. The plan also meets the objective of reducing flood plain risks.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

TITLE PAGE

- a. **Title of Project:** Franks Tract State Recreation Area
General Plan Wetlands Habitat Restoration
Planning Study
- b. **Applicant Information:** Moffatt & Nichol Engineers (Co-Applicant)
Contact: Richard Dornhelm, P.E.
3000 Citrus Circle, Suite 230
Walnut Creek, CA 94598
Tel: 925-944-5411, Fax: 925-944-4732, Email: rdornhelm@moffattnichol.com
- Department of Parks and Recreation State of California (Co-Applicant)
Contact: Ronald Brean, Gold Rush District Superintendent
101 J Street
Sacramento, CA 95814
Tel: 916-445-7373, Fax: 916-327-3872
- c. **Type of Organization and Tax Status:** Moffatt & Nichol Engineers is a private, for profit environmental engineering company. The Department of Parks and Recreation is an agency of the State of California.
- d. **Tax Identification Number:** Moffatt & Nichol Engineers Tax Identification Number: 95-1951343
Department of Parks and Recreation Tax Identification Number: 52-1692634
- e. **Participants in Implementation:**
Jones & Stokes Associates, Inc. – Environmental Sub-Consultant
Hultgren-Tillis Engineers – Geotechnical Sub-Consultant
Towill, Inc. – Surveying Sub-Consultant

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

PROJECT DESCRIPTION

a. Project Description and Approach

Franks Tract State Recreation Area (SRA), located in Contra Costa County, consists of two flooded Delta Tracts totaling approximately 3300 acres owned by the State of California and operated by the Department of Parks and Recreation (DPR). In 1990, DPR contracted with Moffatt & Nichol Engineers (MNE) to prepare an engineering feasibility study of constructing demonstration islands to bolster the fish and wildlife resources of the SRA, provide effective wave barriers to help protect the levees of neighboring islands, and expand the SRA's land base for recreational use, in accordance with the goals of the General Plan for the SRA. The demonstration islands serve as a pilot program for construction of a series of islands with a total area of 500 acres.

The MNE Study considered the feasibility of demonstration island construction in great detail. It included extensive hydrographic, topographic and geophysical field surveys. It also included detailed analyses of wind and wave conditions, tidal hydraulics and sediment transport. A section prepared by a wildlife biologist addressed existing habitat values and the potential for improvement of fish and wildlife resource values, among other non-engineering criteria. The study evaluated alternative sources of material for island construction, including the use of channel dredging spoils and relic sand dunes in the submerged portion of the tract. Sediment samples from the selected borrow sites were analyzed for potentially objectionable constituents. The study described excavation and material placement methods to minimize water quality impacts during construction and help insure the formation of a stable island substrate for the establishment of tidal perennial aquatic habitat, shaded riverine aquatic habitat, and midchannel islands and shoals habitat. The study recommended the construction of four demonstration islands along Piper Slough and estimated construction costs for the work.

The Co-Applicants submitted a joint proposal to CALFED for funding of a phased project to construct the demonstration islands. The first phase of this effort, consisting of completion of the CEQA environmental review and permit process, and preparation of construction documents, has been funded through a grant from CALFED (#97-N12). The second phase of this effort, consisting of demonstration island construction and monitoring, has been proposed to CALFED for funding. These islands will restore about 45 acres of the existing deeply flooded habitat to a combination of CALFED priority habitat types.

The General Plan for the SRA establishes the goal of creating a series of islands with a total area of about 500 acres. The islands can be configured to provide primary ecological benefits for the CALFED priority species by restoring additional deeply flooded habitat to a combination of shallow tidal perennial and intertidal

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

habitat, fresh emergent wetlands habitat, and midchannel islands and shoal habitat. The co-applicants intend to proceed with a study to prepare a specific plan for island buildout. The incentive for preparing this plan now, even as the demonstration island project is still underway, is to have a plan that DPR can utilize for decision making as it seeks out opportunities for additional island construction.

The location of Franks Tract SRA and site map showing the schematic General Plan islands are presented in Figure 1a and 1b respectively.

b. Proposed Scope of Work

The proposed study includes five primary tasks: 1) Ecological Assessment and Restoration Planning, 2) Preliminary Engineering, 3) Implementation Planning, and 4) Environmental Review and Permit Planning. The tasks have been broken into subtasks and detailed in Exhibit V.

The Ecological Assessment will include a site field review by the biological subconsultant to document existing resources. It will provide an inventory of existing ecological values and serve as the basis for a determination of the net ecological and biological benefits to be derived from the proposed wetland habitat restoration. Deliverable shall consist of a report presenting the ecological assessment.

The Restoration Planning will be a multidisciplinary team effort to develop a functional plan for wetland habitat restoration that will include DPR planners, as well as the consulting biologists and engineers. The specific habitat types and their relative proportions will be evaluated based on the CALFED ERPP Objectives and the resource management goals of the DPR to provide an optimum mix in the proposed restoration program. The program will be provided to DPR and CALFED for review to confirm that program objectives for ecosystem restoration (and other objectives such as recreation) are being met. A Conceptual Plan describing the principal features for island buildout will be prepared for the proposed restoration program, which will serve as the basis for implementation planning and environmental review. Deliverable shall consist of a report presenting the proposed restoration program and conceptual plan, including a description of the target species and the net ecological benefits that will be realized from the project. The report will also describe the required ecological and biological monitoring program.

The Preliminary Engineering will utilize the existing database for Franks Tract to the maximum extent; nonetheless, it will be necessary to conduct some additional hydrographic, and geotechnical investigation, as well as supplemental wind, wave, current and sediment transport studies because the boundaries of the 500 acre restoration project are beyond the limits of the focused work performed for the earlier demonstration island project. This data will be used to support preliminary

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

engineering of habitat island construction to enable estimates of fill volumes, fill subsidence, shoreline accretion/erosion and construction cost. Deliverable for this task will consist of a report summarizing the engineering analyses and presenting the functional design elements of the habitat restoration project, including the principal dimensions of the work.

The Implementation Planning will identify possible sources of fill material. Channel deepening and maintenance dredging projects, both ongoing and future programs, will be identified to prepare estimates of future dredge material volumes and quality. Dredging project sponsors, both Corps of Engineers and non-Corps, will be contacted, as will owners of property on which dredged material was previously placed. Based on the projected availability of suitable fill material, a tentative island buildout sequence and schedule will be developed. The emphasis will be placed on beneficial reuse of dredged material, and preparation of a plan for opportunistic use of such material as it becomes available to help reduce the construction funding requirement.

The Implementation Planning will also identify possible sources for construction funding. In particular, recent Corps of Engineers authorizations have allowed the Corps to participate in the cost of ecosystem restoration projects when they involve beneficial reuse of dredged material. Deliverable will consist of a report that describes the preferred sequence of habitat island construction, correlated with projections of fill material availability. The plan will also describe the environmental review and permit process, and funding mechanisms for the project.

The Environmental Review will provide for early identification of environmental issues, and for the mitigation of any adverse impact through changes in design or integration of measures into project construction to avoid such impacts. The intention is to formulate a restoration project through close coordination with the Resource Agencies that will allow a Mitigated Negative Declaration. Deliverables will consist of a Draft Initial Study/Mitigated Negative Declaration and a Draft Mitigation Monitoring Plan.

The Permit Planning will identify the permits and approvals that will be needed for the project, and describe the permit/approval process for each. Deliverable will be a report presenting the plan. Actual permit acquisition is not included.

c. Location

The proposed project is located at the Franks Tract State Recreation Area (SRA) in Contra Costa County as shown on Exhibit 1a. The SRA consists of two flooded Delta Tracts, Franks Tract and Little Franks Tract, as shown on Exhibit 1b. The area was submerged by levee breaks in the late 1930's before its acquisition by the State. The area is bordered by remnant levees and is accessible only by boat.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

d. Expected Benefits

Franks Tract is currently flooded over 95% of its area. The existing water depths vary from about 7 feet MTL in the shallow portions, to about 20 feet MTL in the deeper portions where peat mining (prior to the levee breaks) once occurred, and averages about 10 feet MTL. The proposed study will consider a project to restore about 500 acres of existing deeply flooded habitat to a combination of specific CALFED priority habitat types. Considering the 3300 acre expanse of Franks Tract, the loss of this subtidal habitat will be compensated by the benefits associated with creation of the priority habitat types and the added diversity. Exhibit II identifies the specific CALFED ERPP objectives that are targeted by this project. The primary benefits of the project are all those benefits directly or indirectly associated with the habitat restoration both to CALFED and to the resource management goals of the DPR. The secondary benefits are flood protection for adjacent islands in the form of wave sheltering for the fragile levees, and recreation in the form of opportunity for the public to experience the Delta in a restored state. The opportunity exists for CALFED to obtain substantial benefits for the targeted species in a cost effective manner if it facilitates the wetland habitat restoration by DPR through preparation of the specific plan for island construction.

e. Background and Biological/Technical Justification

The biological justification for the project is the tangible benefits for the CALFED priority species that would result from the restoration of a substantial portion of the deeply flooded habitat on Franks Tract to shallow tidal perennial and intertidal habitat, fresh emergent wetlands, and midchannel islands and shoals habitat.

Dredge Material Islands (DMI's) similar to those in the proposed project have been constructed by the U.S. Army Corps of Engineers at Venice Cut and Donlon Islands using dredged material from the Stockton Deepwater Channel project. These islands are also noteworthy because of the monitoring that preceded and followed their construction about 9 years ago, which documents the Corps' largely successful effort to restore midchannel island and shoal habitat. The wetland design parameters that allowed the targeted plant and animal communities to be established on the DMI's were used by MNE in the preliminary engineering for the demonstration island project.

The durability of the project is a concern because of the relatively long open water fetches on Franks Tract. The coastal engineering expertise of MNE in wind wave analyses, 'soft' techniques for shoreline stabilization and sediment transport processes served as the basis for selecting island sites and stable island configurations. Techniques to facilitate rapid establishment of shoreline vegetation will be incorporated in the project for ecosystem as well as engineering reasons. By providing monitoring and pro-active resource management by a dedicated

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

Resources Agency in the post-construction phase, the long term benefits to the ecosystem can be assured.

This habitat restoration project will compete with other similar projects for suitable fill material for habitat construction. MNE studies of dredged material sources in the Delta, and of beneficial uses for dredged material in connection with Long Term Management Strategy (LTMS) for dredged material from San Francisco Bay, will help identify suitable sources. Due to the flooding of Franks Tract in the late 1930's, and cessation of agricultural activities, the subtidal elevations in the tract are on average only 10 ft. below MTL, rather than 15 ft. to 20 ft. as on most other reclaimed tracts, greatly reducing the volume of fill needed to develop the proposed habitat. The concern over flooding of agricultural tracts and the consequences on water quality should not be an issue at Franks Tract, since it has been flooded for nearly 60 years. Finally, land acquisition is not an issue, since the land is already in State ownership.

The proposed project is a continuing project. The concept of constructing dredge material islands was incorporated into the General Plan for the SRA prepared in 1989. The feasibility of the concept was considered in the previous MNE demonstration island study, and should be proven as the pilot program, which is currently underway, is completed.

The development of the Franks Tract SRA General Plan by DPR included numerous meetings with the public and representatives of the various resource agencies. Reaction to the proposed wetlands habitat restoration was favorable, and no apparent opposition to the project emerged.

f. Monitoring and Data Evaluation

Pre and post-construction Monitoring is necessary to demonstrate the efficacy of the proposed island construction in restoring the targeted habitat types and aiding the targeted species. The required monitoring program will be defined as part of the Study Restoration Planning task 1.04.

g. Implementability

Due to the prior planning and engineering, implementation of the proposed study is relatively straight forward. The General Plan goals were formulated in compliance with current (1988) laws and regulations, and resource agency concerns. Several public meetings were conducted and no apparent opposition to the proposed island construction surfaced. The restoration of the priority habitat types by construction of islands at Franks Tract does not appear to conflict with, or compromise CALFED's mission, or its developing implementation strategy.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

Local and State reaction to the project has been favorable primarily because of perceived flood protection benefits. Local concern has always existed over high levee maintenance and vulnerability due to the long open water fetches on Franks Tract. Water agency concern has existed over the risk of water quality degradation resulting from levee breaks on neighboring islands. Concerns by recreational boaters, hunters and fisherman that frequent the area were addressed in the development of the project.

Land uses will not be altered by the proposed project. The area has been, and will remain in Park use.

Sediment tests during the Demonstration Island Feasibility Study did not detect significant levels of compounds considered hazardous under California Admin Code Title 22 procedures. Heavy metals detected in the area soils appeared to represent background levels; no other potentially hazardous compounds were detected.

Title to the land within Franks Tract already resides with the State of California.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

COSTS AND SCHEDULE TO IMPLEMENT PROPOSED PROJECT

a. Budget Costs

Budget costs for the study tasks are presented on Exhibit III. This proposal requests CALFED funding of all tasks. DPR does not have funding for this study. The DPR share will be contributed in the form of in-kind coordination services, estimated to be about \$20,000 over the duration of the study. These coordination costs are not shown in the budget.

The items of work to be contracted out are:

Environmental Services – recommend sole source subcontract with Jones & Stokes Associates based on unique qualifications.

Geotechnical Services – recommend sole source subcontract with Hultgren-Tilliis Engineers.

Surveying Services – recommend sole source subcontract with Towill, Inc.

b. Schedule Milestones

A Schedule is presented on Exhibit IV.

Payment requests for work progress will be submitted together with the progress reports on a monthly basis.

c. Third Party Impacts

Third party impacts have been identified for:

Neighboring Island Flood Protection - beneficial impact on local reclamation districts due to wave sheltering that will reduce levee vulnerability and maintenance; also beneficial impact on State because its liability exposure arising from waves generated on Franks Tract SRA will reduce.

SRA Recreationists - net beneficial impact on boaters, hunters and fisherman due to ecosystem restoration, although loss of some deeply flooded habitat will possibly concern bass fishermen.

State Water Agencies - beneficial impact due to reduced risk of levee failure on neighboring islands and the adverse impacts that such a levee failure would have on Delta water quality.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

Based on the public participation process conducted by DPR during the General Plan preparation, the project appears to be self mitigating with no known opposition. The environmental certification and permit process that will occur following completion of this study should provide sufficient opportunity for public interest and resource agency review of the project.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

APPLICANT QUALIFICATIONS

a. Moffatt & Nichol Engineers

Restoration of wetlands requires expertise in various engineering disciplines. A feasible design draws from the experience of civil and hydrologic engineers, combined with wetland biologists and coordinated with the resource agencies to form a workable solution.

Key elements involved in a wetlands project include dredging and disposal plan, vegetation plan, utility relocation, hydraulics, and culvert design. Moffatt & Nichol Engineers has experience in each of the areas and includes the development and application of hydrodynamic and water quality modeling. Models have been developed and calibrated in wetlands specifically for the design of wetlands. Modeling using accurate dynamic algorithms and prototype data are invaluable aids in the design process.

Moffatt & Nichol Engineers provides a wide range of services, with one of the largest coastal engineering staffs in the United States, complemented by an experienced civil and hydrologic engineering staff, the firm is capable of handling large and diverse wetlands design projects. We have a rapport with resource agencies and have worked with the leading biologists in the area to study and design wetlands. Wetland design is a service which Moffatt & Nichol Engineers provide with the same dedication that has earned us national recognition as a leader in waterfront facility design for over 50 years. Representative project experience includes:

Franks Tract State Recreation Area. Moffatt & Nichol Engineers developed preliminary engineering documents for an island demonstration project that will restore wildlife habitat, provide wave protection benefits, and increase the recreational land base at the flooded 3,300 acre Delta tract.

Pierce Island Wetlands Habitat Restoration. Moffatt & Nichol Engineers managed the environmental certification process, obtained required permits and prepared plans, specifications and estimates for wetlands habitat restoration at Pierce Island. Approximately 100,000 cubic yards of dredged material was used to cover abandoned sewage treatment lagoons on the island. The project provided for partition of the 74 acre island into a wetland habitat mitigation area and a dredged material management area.

Batiquitos Lagoon Enhancement Project. Moffatt & Nichol Engineers refined concepts and developed construction documents with cost estimates to return Batiquitos Lagoon to a productive estuary. The project included the creation of a tidal inlet, the construction of two jetties, protection of five bridges and a dredging

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

program in the lagoon to restore the tidal prism, which will promote a stable ocean entrance, provide the desired water quality, and create specific subtidal and intertidal areas.

Bolsa Chica Wetland Restoration. Moffatt & Nichol Engineers developed a wetland restoration plan for over 900 acres of coastal wetlands. Tidal water flow through the wetlands was determined using specialized hydraulic engineering and numerical models. Various tide control structures were designed to provide the desired flow conditions and to restore the wetlands.

Laguna Grande and Roberts Lake Restoration. Moffatt & Nichol Engineers provided preliminary engineering, and final design for the restoration of the lakes, near Monterey, CA. Restoration required dredging and disposal of over 120,000 cubic yards of accumulated lake sediments, and excess vegetation that choked the once open waters of the lakes. It also included creek channel improvements, construction of waterfowl islands, fishing piers, observation platforms and trails.

Anaheim Bay Mitigation. Moffatt & Nichol Engineers developed a wetland restoration plan for 117 acres in Anaheim Bay. The project was required to replace critical habitat lost in San Pedro Bay because of port development. The mitigation plan created various types of wetlands and submerged lands, as specified by resource agencies.

b. Jones & Stokes Associates (Recommended Environmental Subconsultant)

Comprehensive Environmental and Habitat Restoration Experience. The Jones & Stokes Associates Team is experienced in environmental restoration, including planning, design, and construction. Team members have worked together on numerous projects. Our greatest ability is to integrate restoration opportunities with flood control designs to achieve both flood control protection and environmental restoration. The Jones & Stokes Associates Team provides multidisciplinary services to meet the objectives of natural resource management, habitat restoration and mitigation, and environmental compliance and permitting. Our Team has acquired extensive experience in restoring riparian systems and wetland communities by designing, implementing, maintaining, and monitoring restoration projects throughout California. We have developed a habitat restoration philosophy that is a systems-based approach, integrating the vegetation and wildlife resources of the restored habitat into the surrounding landscape and connecting watersheds. We have been involved with creating and restoring over 1,100 acres of wetlands and riparian communities in the last 6 years.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

c. Project Principal Personnel

Richard B. Dornhelm, P.E. The principal in the project for MNE is Mr. Dornhelm. He brings more than 30 years of specialized experience in engineering for coastal and riverine construction, including numerous wetlands habitat restoration projects. As Project Manager, Mr. Dornhelm has directed many multidisciplinary projects requiring progressive team organization and supervision, and stringent project budget and schedule controls. His understanding of the complex project permit and approval process has honed his ability to build consensus for project implementation. His years of experience in the preparation of engineering plans, specifications and estimates has been a major factor in the successful implementation of the projects he has managed.

Ronald Brean. The primary principal in the project for DPR is Mr. Brean. He is currently the District Superintendent for DPR's Gold Rush District, which includes the Delta park units. Mr. Brean has nearly 27 years experience in managing natural and cultural park units throughout California and has an educational background in zoology with an emphasis on wildlife management. District staff resources available to Mr. Brean include a State Park Resource Ecologist, park maintenance personnel, and ranger staff.

**FRANKS TRACT STATE RECREATION AREA
GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

Proposal Forms required of Moffatt & Nichol Engineers for Services/Private
Contracts follow this page.

Certifications Regarding Debarment, Suspension and Other Responsibility Matters, Drug-Free Workplace Requirements and Lobbying

Persons signing this form should refer to the regulations referenced below for complete instructions:

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions - The prospective primary participant further agrees by submitting this proposal that it will include the clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions. See below for language to be used or use this form for certification and sign. (See Appendix A of Subpart D of 43 CFR Part 12.)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions - (See Appendix B of Subpart D of 43 CFR Part 12.)

Certification Regarding Drug-Free Workplace Requirements - Alternate I. (Grantees Other Than Individuals) and Alternate II. (Grantees Who are Individuals) - (See Appendix C of Subpart D of 43 CFR Part 12.)

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of the Interior determines to award the covered transaction, grant, cooperative agreement or loan.

PART A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

CHECK ☒ IF THIS CERTIFICATION IS FOR A PRIMARY COVERED TRANSACTION AND IS APPLICABLE

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

CHECK ☐ IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

OI-2010
June 1995
(This form replaces OI-1983, OI-1984,
OI-1986, OI-1988 and OI-1989)

PART C: Certification Regarding Drug-Free Workplace Requirements

CHECK X IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS NOT AN INDIVIDUAL.

Alternate I. (Grantees Other Than Individuals)

A. The grantee certifies that it will or continue to provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing an ongoing drug-free awareness program to inform employees about—
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will —
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- (e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
- (f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted —
 - (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a) (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

Moffatt & Nichol Engineers

3000 Citrus Circle, Suite 230

Walnut Creek, CA 94598

Check if there are workplaces on file that are not identified here.

PART D: Certification Regarding Drug-Free Workplace Requirements

CHECK IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternate II. (Grantees Who Are Individuals)

- (a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;
- (b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

01-2010
June 1995
(This form replaces 01-1963, 01-1964,
01-1966, 01-1968 and 01-1993)

**FRANKS TRACT STATE RECREATION AREA GENERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

ERPP OBJECTIVES			
SECTION	OBJECTIVE	PAGE	VOL.
Ecological Process Visions – Bay Delta Aquatic Foodweb	<ul style="list-style-type: none"> • Increase the amount and diversity of organic matter input from Bay-Delta Watershed by restoring aquatic, riparian and wetlands habitats. 	60	1
Ecological Process Visions – Midchannel Islands and Shoals	<ul style="list-style-type: none"> • Install structures to weaken the force of waves to reduce midchannel erosion in sensitive areas. 	87	1
Ecological Process Visions – Fresh Emergent Wetland	<ul style="list-style-type: none"> • Increase land elevations in the interior of Delta islands where subsidence has lowered land elevations below tidal emergent wetlands. • Use substrate materials to create levee berms at elevations necessary for fresh emergent vegetation. 	97	1
Visions for Reducing or Eliminating Stressors – Dredging and Sediment Disposal	<ul style="list-style-type: none"> • Coordinate all actions closely with federal, State and local agencies charged with regulating dredging activities in the Bay-Delta. • Maximize the reuse of dredged materials for habitat restoration and other beneficial uses and minimize the amount of disposed material that is subject to resuspension and subsequent dredging. • Support continued research on sediment transport and deposition, sediment quality and toxicity testing, the environmental effects of suspended sediment and contaminants, and the beneficial reuse of dredged materials so that dredging and sediment disposal management will continue to improve. 	238	1
Sacramento-San Joaquin Delta Ecological Zone – Perennial Aquatic Habitat	<ul style="list-style-type: none"> • Increase the area of shallow-water and intertidal mudflat habitat to improve conditions that support increased primary and secondary productivity; provide rearing and foraging habitat, and escape cover for fish; and provide foraging and resting habitat, and escape cover to water birds. 	43	2
Sacramento-San Joaquin Delta Ecological Zone – Midchannel Islands Shoals	<ul style="list-style-type: none"> • Protect and enhance existing remnant channel islands in the Delta. Prioritize island restoration starting with those that have greatest chance to be maintained by restored streamflow patterns, hydraulic conditions, sediment transport, and other restored ecosystem processes. 	45	2
Sacramento-San Joaquin Delta Ecological Zone – Fresh Emergent Wetland Habitat (Tidal)	<ul style="list-style-type: none"> • Protect and enhance existing wetlands by restoring tidally influenced freshwater emergent wetland in the Delta to: <ul style="list-style-type: none"> Provide high-quality habitat for waterfowl, shorebirds, and other associated wildlife; Provide rearing, foraging, and escape cover for fish; and Expand the populations and ranges of associated special-status, federally listed, and State-listed plant and animal species. • This will help to restore and maintain the ecological health of the aquatic resources in and dependent on the Delta. 	46	2

**FRANKS TRACT STATE RECREATION AREA C LERAL PLAN WETLANDS HABITAT RESTORATION
PLANNING STUDY**

Prepared for: CALFED
Prepared by: Moffatt & Nichol Engineers
Submitted: July 2, 1995

Budget Summary

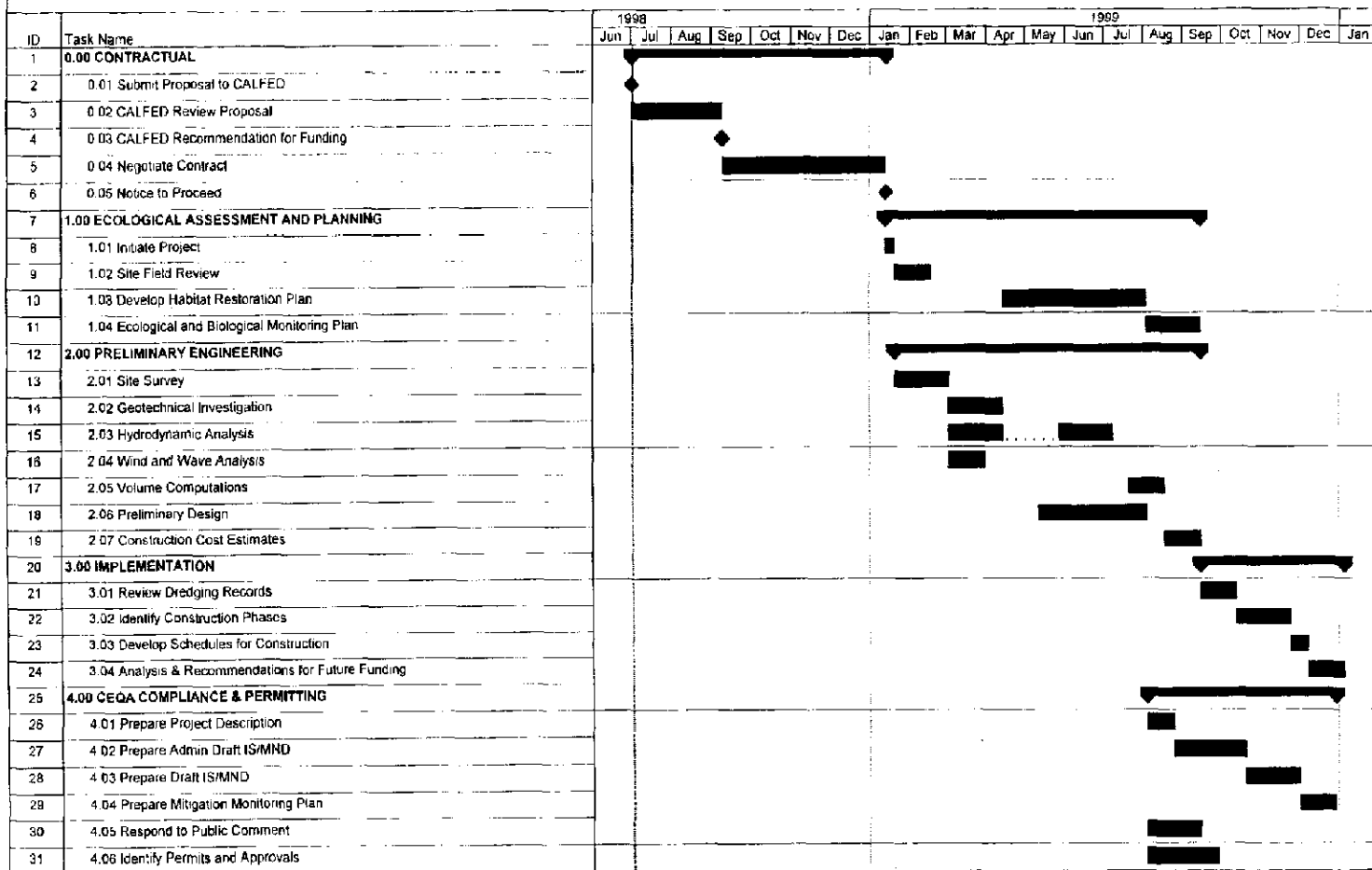
Task No.	Task/Subtask Description	Direct Labor Hours	Total M&N	Overhead Labor (General, Admin. and fee)	Service Contracts	Material and Acquisition Contracts	Miscellaneous and other Direct Costs	Task Total
1.00	Ecological Assessment and Planning							
1.01	Initiate Project	24	\$ 2,532		\$ 1,328		\$ 127	\$ 3,987
1.02	Site Field Review	20	\$ 2,164		\$ 9,218		\$ 908	\$ 12,290
1.03	Develop Habitat Restoration Plan	80	\$ 7,996		\$ 34,069		\$ 490	\$ 42,455
1.04	Ecological and Biological Monitoring Plan	0			\$ 6,751			\$ 6,751
	TOTAL Environmental Assessment and Planning	124	\$ 12,692	\$ -	\$ 51,366	\$ -	\$ 1,435	\$ 65,493
2.00	Preliminary Engineering							
2.01	Site Survey	8	\$ 952		\$ 20,924		\$ 48	\$ 21,924
2.02	Geotechnical Investigation	24	\$ 2,424		\$ 86,949		\$ 121	\$ 89,494
2.03	Hydrodynamic and Water Quality Analysis	396	\$ 35,668				\$ 1,793	\$ 37,461
2.04	Wind and Wave Analysis	64	\$ 5,688				\$ 284	\$ 5,972
2.05	Volume Computations	144	\$ 11,600				\$ 560	\$ 12,160
2.06	Preliminary Design	504	\$ 44,280				\$ 2,214	\$ 46,494
2.07	Construction Cost Estimates	80	\$ 8,240				\$ 412	\$ 8,652
	TOTAL Preliminary Engineering	1220	\$ 109,052	\$ -	\$ 107,873	\$ -	\$ 5,453	\$ 222,378
3.00	Implementation							
3.01	Review Dredging Records	60	\$ 8,224				\$ 411	\$ 8,635
3.02	Identify Construction Phases	108	\$ 9,960				\$ 498	\$ 10,458
3.03	Develop Schedules for Construction	28	\$ 2,800				\$ 145	\$ 2,945
3.04	Analysis & Recommendation for Future Funding	80	\$ 8,968		\$ 5,750		\$ 448	\$ 15,166
	TOTAL Implementation	296	\$ 30,952	\$ -	\$ 5,750	\$ -	\$ 1,503	\$ 37,305
4.00	CEQA Compliance & Permitting							
4.01	Prepare Project Description	16	\$ 1,688		\$ 2,237		\$ 84	\$ 4,009
4.02	Prepare Admin Draft IS/MND	18	\$ 1,152		\$ 22,348		\$ 58	\$ 23,558
4.03	Prepare Draft IS/MND	20	\$ 1,628		\$ 2,672		\$ 61	\$ 4,361
4.04	Prepare Mitigation Monitoring Plan	0			\$ 4,112			\$ 4,112
4.05	Respond to Public Comment	28	\$ 2,472		\$ 4,412		\$ 124	\$ 7,008
4.06	Identify Project Permits and Approvals	16	\$ 1,688		\$ 2,741		\$ 84	\$ 4,513
	TOTAL CEQA Compliance & Permitting	98	\$ 8,628	\$ -	\$ 38,322	\$ -	\$ 431	\$ 47,381
	TOTAL PROJECT COST	1,736	\$ 160,424	\$ -	\$ 203,511	\$ -	\$ 8,821	\$ 372,756

EXHIBIT III

I - 0 1 0 0 2 7

I-010027

FRANKS TRACT STATE RECREATION AREA GENERAL PLAN WETLANDS HABITAT RESTORATION PLANNING STUDY



Franks Tract State Recreation Area
General Plan Wetlands Habitat Resto
Planning Study

Date Thu 7/2/98

Task Progress Milestone Summary Rolled Up Task Rolled Up Milestone Rolled Up Progress Spt External Tasks Project Summary

EXHIBIT IV

1-010028

1-010028

FRANKS TRACT STATE RECREATION AREA GENERAL PLAN WETLANDS HABITAT RESTORATION PLANNING STUDY

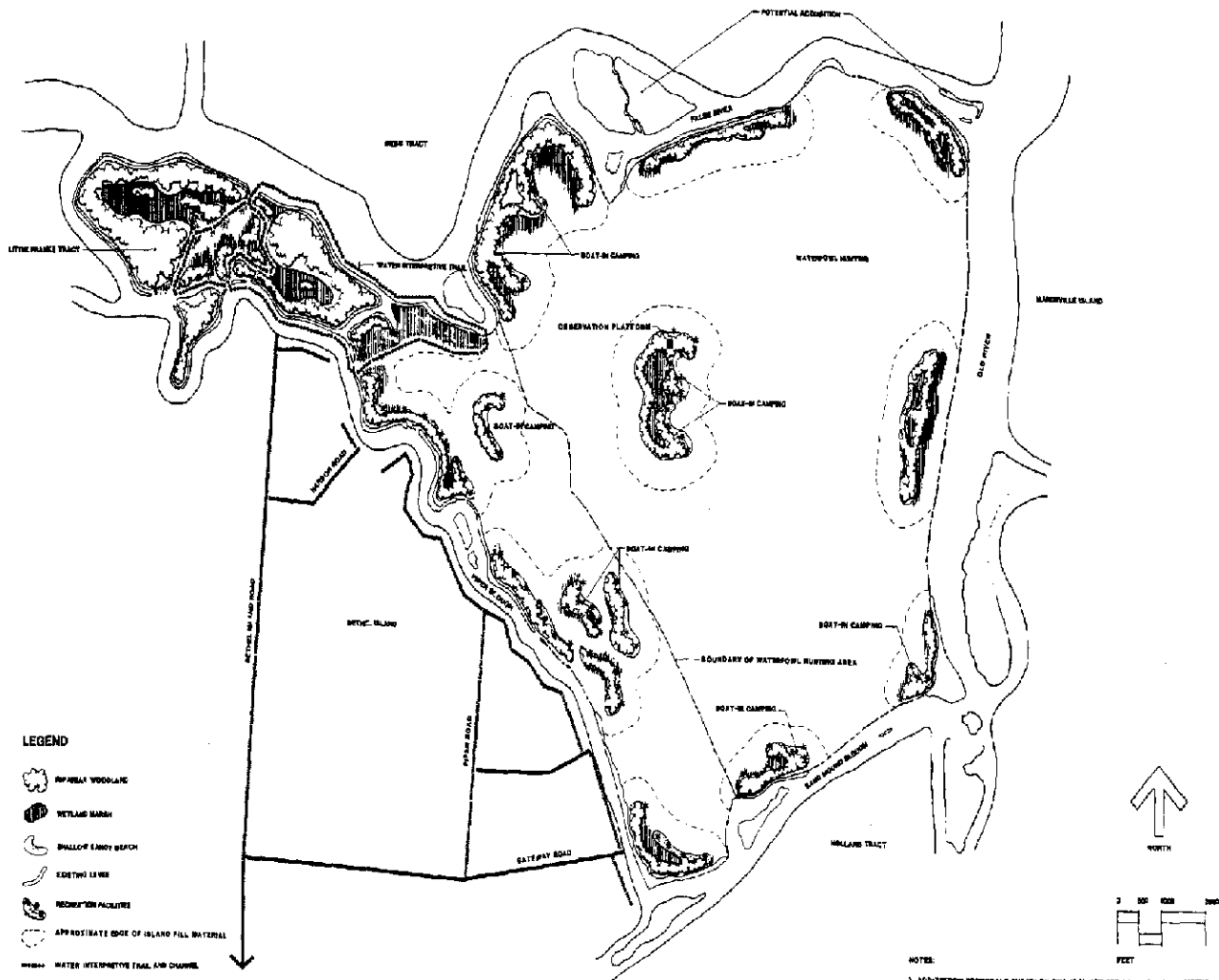
Prepared for: CALFED
Prepared by: Moffatt & Nichol Engineers
Submitted: July 2, 1998

Tasks Summary

Task No.	Task/Subtask Description	Lead Consultant	Deliverable
1.00	Ecological Assessment and Planning		
1.01	Initiate Project	JSA	PROGRESS REPORT
1.02	Site Field Review	JSA	FINAL REPORT
1.03	Develop Habitat Restoration Plan	JSA	FINAL REPORT
1.04	Ecological and Biological Monitoring Plan	JSA	FINAL REPORT
2.00	Preliminary Engineering		
2.01	Site Survey	TOWILL, INC.	SURVEY
2.02	Geotechnical Investigation	HULTGREN & TILLIS, ENGINEERS	FINAL REPORT
2.03	Hydrodynamic and Water Quality Analysis	MNE	FINAL REPORT
2.04	Wind and Wave Analysis	MNE	FINAL REPORT
2.05	Volume Computations	MNE	FINAL REPORT
2.06	Preliminary Design	MNE	FINAL REPORT
2.07	Construction Cost Estimates	MNE	FINAL REPORT
3.00	Implementation		
3.01	Review Dredging Records	MNE	FINAL REPORT
3.02	Identify Construction Phases	MNE	FINAL REPORT
3.03	Develop Schedules for Construction	MNE	SCHEDULES
3.04	Analysis & Recommendation for Future Funding	MNE	FINAL REPORT
4.00	CEQA Compliance & Permitting		
4.01	Prepare Project Description	MNE	FINAL REPORT
4.02	Prepare Admin Draft IS/MND	JSA	AD IS / MND
4.03	Prepare Draft IS/MND	JSA	D IS / MND
4.04	Prepare Mitigation Monitoring Plan	JSA	MITIGATION MONITORING PLAN
4.05	Respond to Public Comment	JSA	RESPONSES
4.06	Identify Project Permits and Approvals	JSA	PERMIT APPLICATIONS

EXHIBIT V -

1-010030



REF: "GENERAL PLAN FOR BRANNAN ISLAND AND FRANKS TRACT STATE RECREATION AREAS" STATE OF CALIF. DEPT. OF PARKS AND RECREATION, FEB. 1988

DESIGNED BY DATE	REVIEWED BY DATE	APPROVED DATE
REPUBLICS AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION		
FRANKS TRACT STATE RECREATION AREA LAND USE AND FACILITIES		
DRAWING NO. MAP 7	SHEET NO. 50	

1-010030

PART E: Certification Regarding Lobbying
Certification for Contracts, Grants, Loans, and Cooperative Agreements

CHECK ☒ IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS \$100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT; SUBCONTRACT; OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

CHECK ☐ IF CERTIFICATION IS FOR THE AWARD OF A FEDERAL LOAN EXCEEDING THE AMOUNT OF \$150,000, OR A SUBGRANT OR SUBCONTRACT EXCEEDING \$100,000, UNDER THE LOAN.

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

As the authorized certifying official, I hereby certify that the above specified certifications are true.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL



TYPED NAME AND TITLE Richard B. Dornhelm, Vice President

DATE July 2, 1998

DE-2010
June 1988
(This form replaces DE-1062, DE-1064,
DE-1065, DE-1066 and DE-1067)

EXHIBITS

